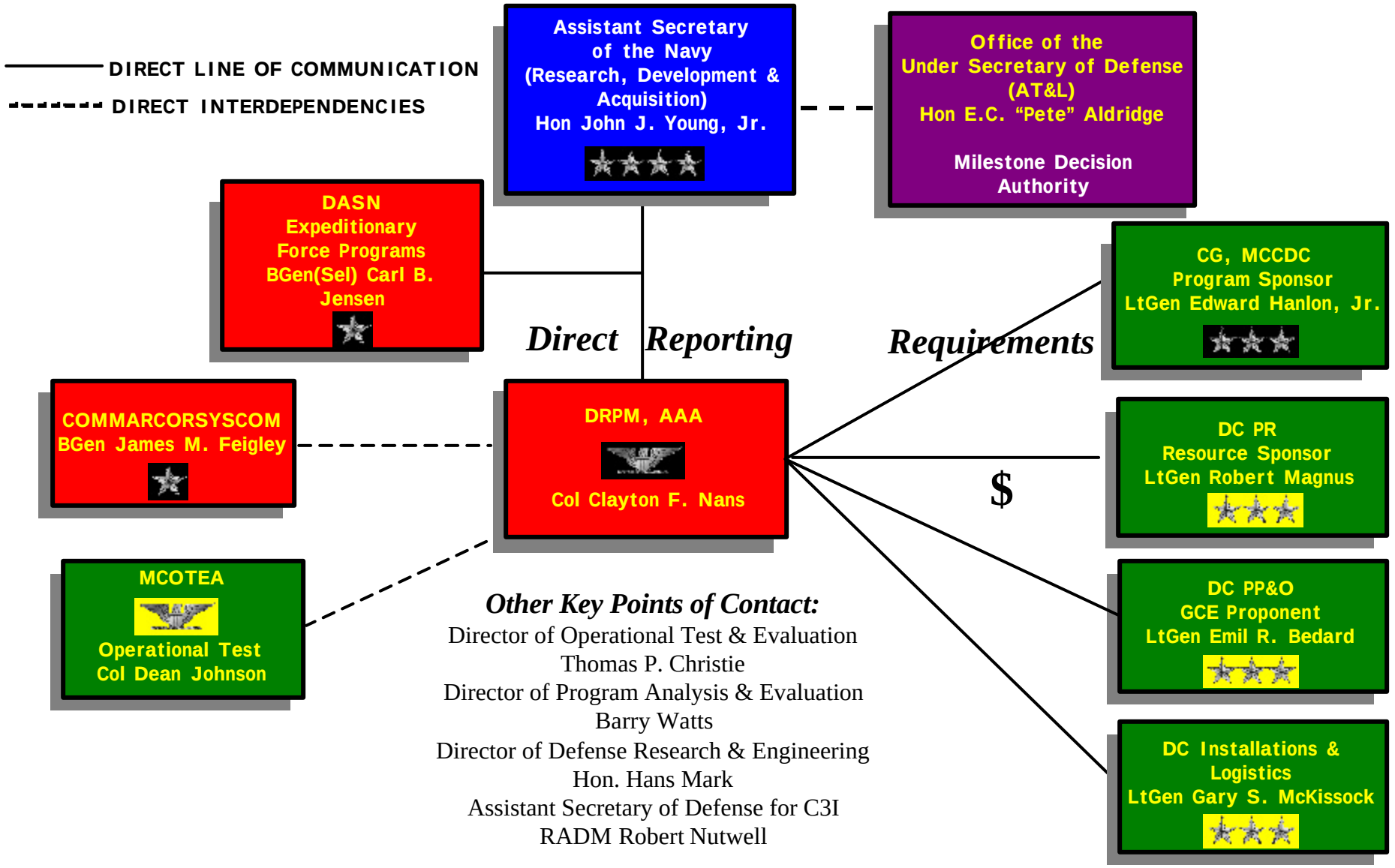
Program Update

2001 Combat Vehicles Conference

21 March 2002

DIRECT REPORTING PROGRAM MANAGER
ADVANCED AMPHIBIOUS ASSAULT
"One of Only Two DRPM's in DON"



Other Key Points of Contact:

Director of Operational Test & Evaluation
Thomas P. Christie
Director of Program Analysis & Evaluation
Barry Watts
Director of Defense Research & Engineering
Hon. Hans Mark
Assistant Secretary of Defense for C3I
RADM Robert Nutwell

CO-LOCATED FACILITIES

"Our Key to Success"

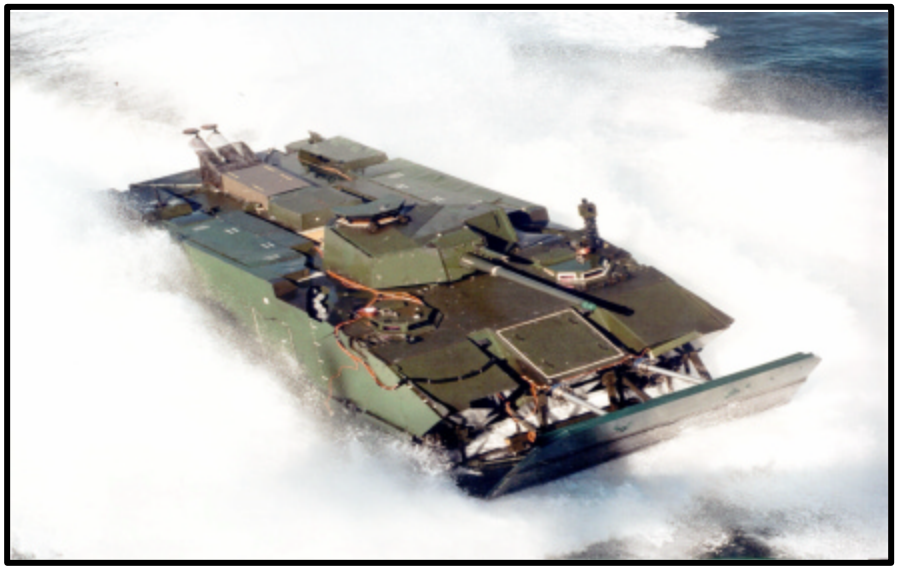
AAAV Technology Center
991 Annapolis Way
Woodbridge, VA 22191

Worth Avenue Technology Annex
14042 Worth Avenue
Woodbridge, VA 22191

AAAV MISSION

"Performs the Signature Mission of the Corps"

Provide High Speed Transport of Embarked Marine Infantry From Ships Located Beyond the Horizon to Inland Objectives



Provide Armor Protected Land Mobility and Direct Fire Support During Combat Operations

AAAV

"Revolutionizing Expeditionary Maneuver Warfare"

Past: AAV

- WWII Doctrine
- No Standoff Distance for ATF
- Slow Speed Amphibious Assault
- 1960's Technology
- Limited Survivability

New System Validation:
- Three AOA's/COEA's
- Comprehensive Whole Systems Trade Study

Identified Deficiencies:
- Tactical Mobility
- Close Combat
- Command & Control
- Survivability

Future: AAAV

- Defense Stand-off Space for Amphibious Task Force
- Operational Reach - Land and Water Maneuver
- Seamless Maneuver OMFTS/STOM
- Precision Lethality
- Survivable on 21st Century Battlefield
- Enhanced C4I

Leap Ahead to 21st Century Technology

AAAV DEVELOPMENT CYCLE

"Getting There is Half the Fun"

FY88 - FY95 Concept Exploration

Hydrodynamic Test Rig

Automotive Test Rig

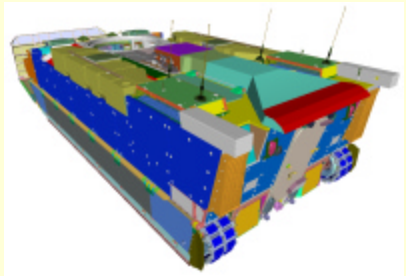
Technology Demonstrators

FY95 - FY01 Program Development and Risk Reduction

- USER Juries
- Combined Arms Exercise
- Force on Force Modeling
- AAAV(C) Early Operational Assessment

Integrated Functionality

FY01 - FY06 System Development and Demonstration

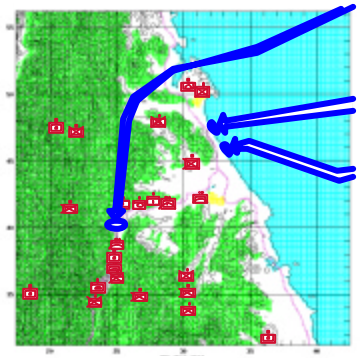


- 9 Vehicles
- SDD OA
- Cold Weather OA
- RAM-D Testing
- IETM Validation/ Verification

Multi-Vehicle Operations Operational Suitability

FY04 - FY08 Production Readiness and Low Rate Initial Production

- IOT&E - FY06



Full-Up System Live Fire IOT&E Test to Prove

KEY PERFORMANCE PARAMETERS

"Capability Requirements"

CRITERIA	THRESHOLD	OBJECTIVE
• **High Water Speed -** Sea State 3, 3' significant wave height, for not less than one continuous hour	**20 knots**	**25 knots**
• **Land Speed -** Forward speed on hard surface road	**69 kph**	**72 kph**
• **Firepower -** Maximum effective range. Main armament range. Interoperability/ standard ammunition with other service(s)	**1500m**	**2000m**
• **Armor Protection -** Any azimuth	**14.5mm/300m**	**30mm/1000m**
• **Reliability -** Mean Time Between Operational Mission Failures	**70 hrs**	**95 hrs**
• **Carrying Capacity**	**17 Marines**	**18 Marines**
• **Interoperability** * Information Exchange Requirements	**100% of Critical *IERs**	**100% of Top Level *IERs**

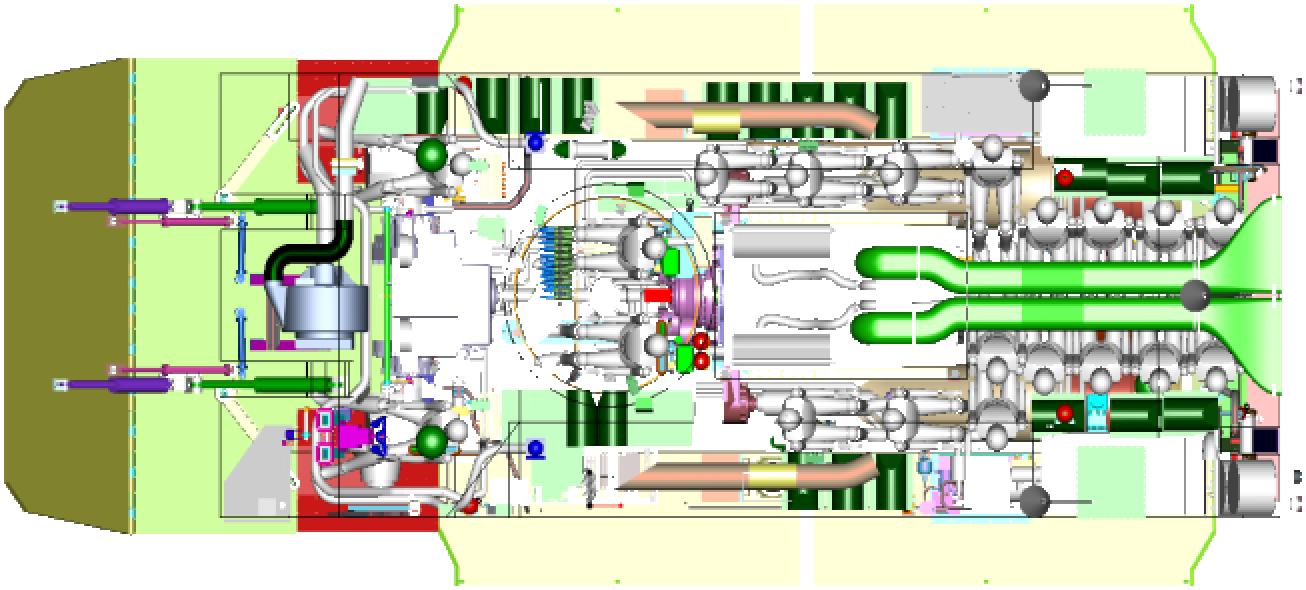
AAAV vs. AAV7A1

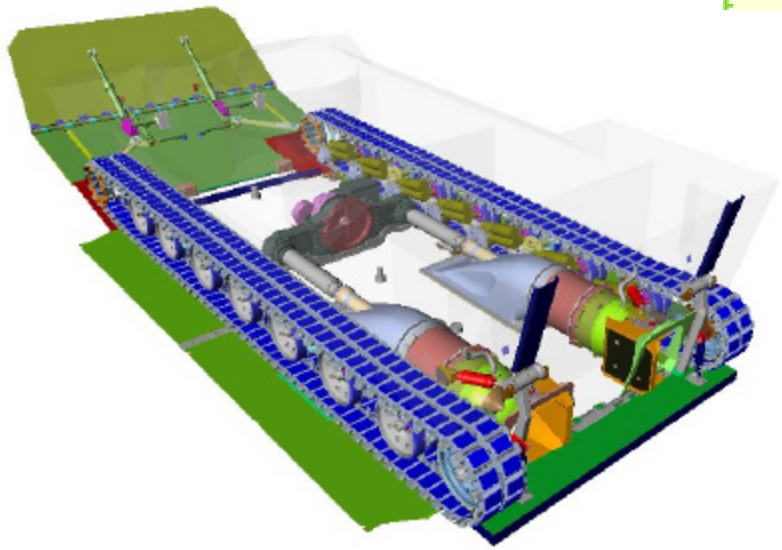
"Revolutionary Leap in Combat Capability"

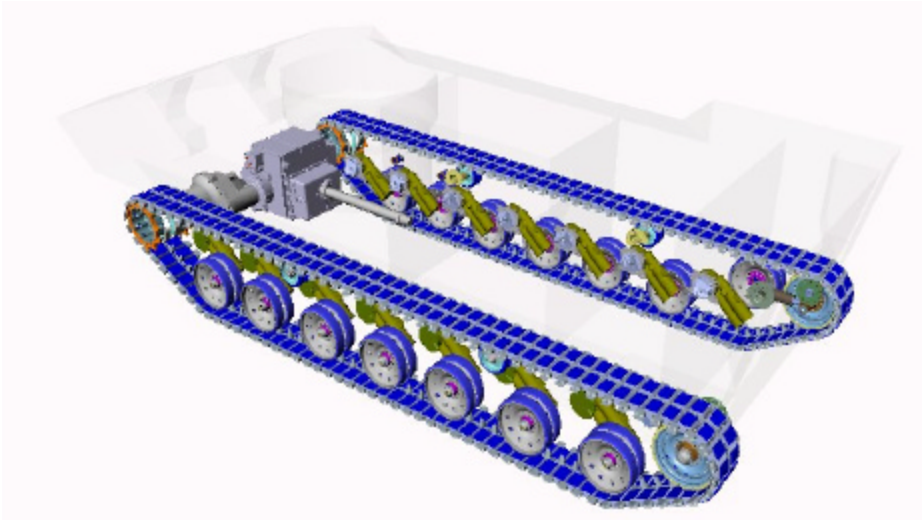
Performance	AAAV	AAV7A1
Firepower	30mm High Velocity Cannon 7.62 Coax Fully Stabilized Turret Full Solution F/C System Laser Range Finder 2nd Generation FLIR	.50 Cal Machine Gun MK19 40mm AGL None None None None
Armor Protection	14.5mm @ 300 Meters Integral Spall Protection Mine Blast Protected Seats	7.62mm @ 300m None None
NBC Protection	NBC Overpressure System (Crew & Embarked Personnel Protected)	None
Survivability	"State of the Practice" Signature Management Technologies	None
Water Speed	20+ Knots	5 Knots
Sea Launch Distance	25 Nautical Miles	2 Nautical Miles
Land Mobility	>=M1A1	Limited by Terrain
21st Century Technology	Embedded Training, Interactive Electronic Technical Manuals	None
C4I	VHF, UHF, SATCOM, GPS, EPLRS, C2PC	VHF, Hand Held GPS

THE DESIGN CHALLENGE

"….From Jet Ski to Infantry Combat Vehicle.…"







AAAV HIGH WATER SPEED MODE

"Seamless Maneuver…Enhanced Operational Reach"

- **Speed: 20-25 knots**
- **High Speed Ops in Sea State 3**
- **Maintains Heading in 10 ft. Significant Wave Height**
- **High Speed Turning Radius<85 m**
- **Stop Within 75 Meters**
- **Water Range: 65 Nautical Miles (75 statute miles)**

High Water Speed & Rapid Seamless Maneuver Ashore

Exploiting Threat Weakness

AAAV LAND MODE

"Once Ashore…the Most Advanced Infantry Combat Vehicle on the Battlefield"

- Cross-Country Mobility: >= M1A1
- Top Speed: 45mph (0-20mph in 7 seconds)
- Range: 250 Miles After 1-Hour (25 nautical miles) High Water Speed Transit or 400 miles (land only)
- Obstacle Crossing: 8-Foot Trench Span, 3-Foot Vertical Wall

AAAV FIREPOWER

"Precision Gunnery at Significantly Increased Ranges"

- **Two Man Turret**
- **MK 44 Mod 1 30/40 mm High Velocity Cannon**
- **7.62 Coax**
- **Full Solution (M1A2) F/C**
- **Fully Stabilized**
- **2nd Gen FLIR (240x4)**
- **Eye Safe Laser Range Finder**
- **Embedded Training**
- **Open System Architecture**

AAAV (C) C4I

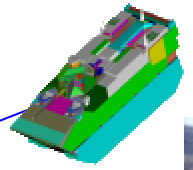
"State of the Art C4I Architecture"

COMMAND ELEMENTS

COC/FSCC (REG/DIV)

MAGTF HQ
SACC/LFOC/TACLOG

MANEUVER ELEMENTS



FIRE SUPPORT ELEMENTS

Close Air Support/Fixed Wing

Close Air Support/Rotary Wing

Naval Surface Fire Support

Artillery

81mm Mortar

(UHF SAT/HF/VHF)
(UHF)

(UHF SAT/HF/VHF)
(UHF)

(UHF)

(VHF/UHF)

(UHF)

(HF)

(VHF)

(VHF)

AAAV(C) BN/REG TACTICAL ECHELON CP

- (8) VHF SINCGARS
- (2) UHF LOS
- (2) UHF SATCOM
- (2) EPLRS
- (7) Staff Workstations
- MSBL & AFATDS
- INS and GPS

SENSOR ELEMENTS

(VHF)
(HF) Forward Air Controller
Forward Observer
Mortar Observer
NSFS Spotter

(VHF)
(UHF)
(UHF SAT)
(HF)

Counterbattery Radar

TESTING HIGHLIGHTS

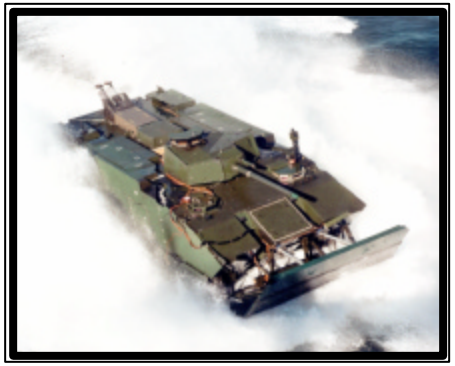
"Testing to Learn"

- **Land Testing - 3,765 Miles**
- **Water Testing - 1,913 Hours**
- **Firepower Testing**
- **Ballistic Hull & Turret Survivability Testing**
- **C4I Testing**
- **AAAV (P) and AAAV(C) EOA**
- **Logistics Demonstration (Training & Maintenance**
- **IETM Demonstration**
- **User Juries**

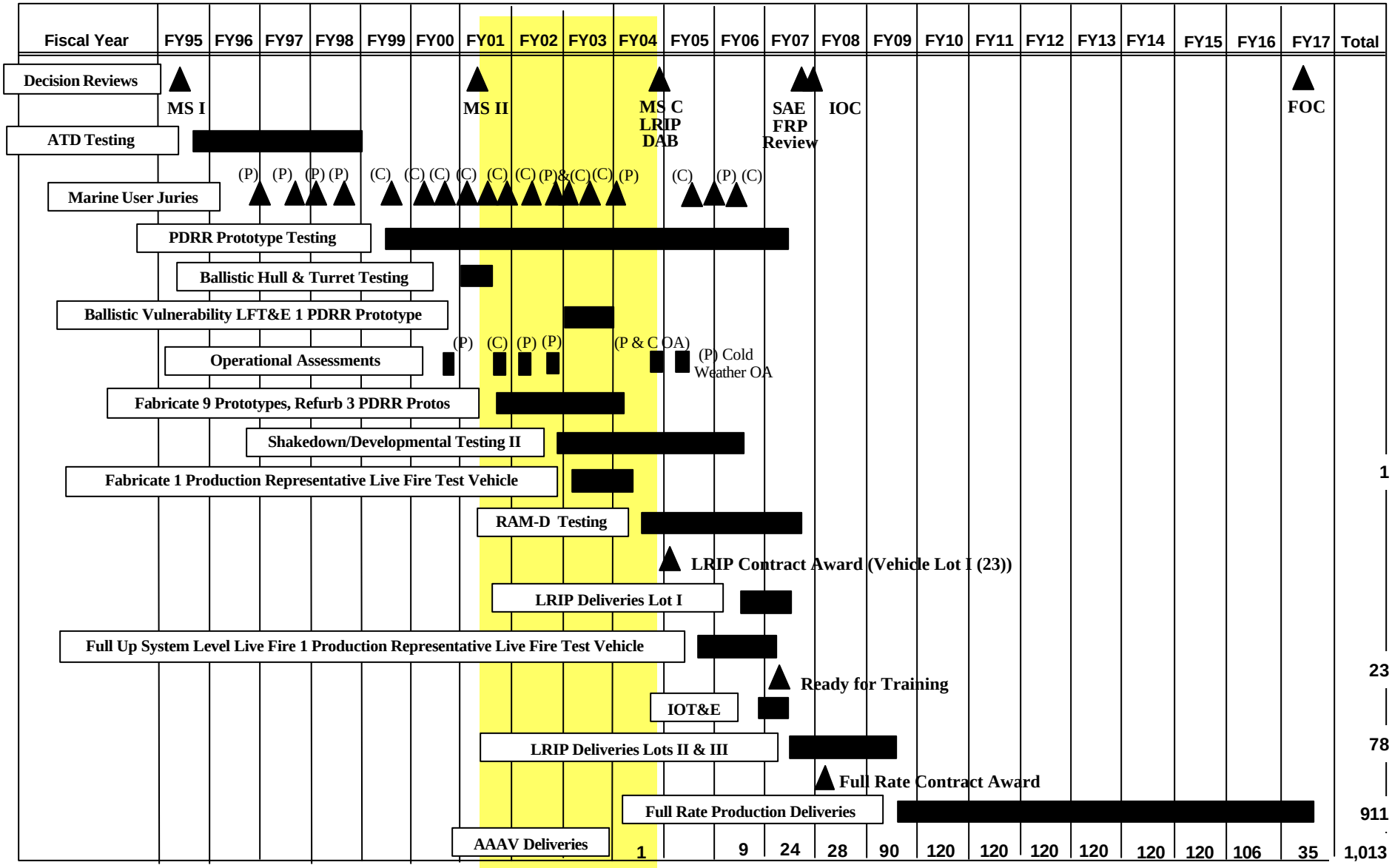
SDD PHASE EFFORTS

"Testing and Production Preparation"

- **Operationally Test 9 SDD Prototypes**
- **Develop Training Systems**
- **Develop Manuals / Pubs / Technical Data**
- **Develop Manufacturing / Production Processes**
- **Build School Facilities**
- **Establish Interim Contractor Support**
- **Support Low Rate Production**
- **Support IOT&E**
- **Support Full-Up Live Fire Testing**
- **Design Full Rate Production Vehicles**



AAAV PROGRAM SCHEDULE
19 March 2002



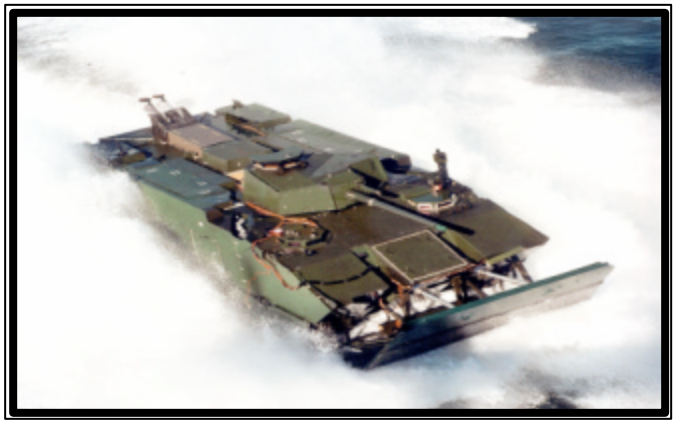
QUESTIONS?

Increased Operational Reach to Execute OMFTS/STOM

AAAV…

Defensive Standoff Space for ATF

Direct Fire Support for Embarked Infantry



Enhanced C4I Capability for Crew and Embarked Infantry

Enhanced Survivability for Crew and Embarked Infantry

Http://www.aaav.usmc.mil